

<b>Notice of Allowability</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/636,455	CHOU ET AL.	
	Examiner Lawrence B Williams	Art Unit 2634	

-- **The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1.  This communication is responsive to RCE filed on 21 January 2005.
2.  The allowed claim(s) is/are 1, 4-11, 13, 15, renumbered as 1, 2-9, 10, 11, respectively.
3.  The drawings filed on 14 May 2001 are accepted by the Examiner.
4.  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a)  All
  - b)  Some\*
  - c)  None
 of the:
  1.  Certified copies of the priority documents have been received.
  2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3.  Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5.  A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6.  CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
  - (a)  including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
    - 1)  hereto or 2)  to Paper No./Mail Date \_\_\_\_\_.
  - (b)  including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7.  DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1.  Notice of References Cited (PTO-892)
2.  Notice of Draftsperson's Patent Drawing Review (PTO-948)
3.  Information Disclosure Statements (PTO-1449 or PTO/SB/08),  
Paper No./Mail Date \_\_\_\_\_
4.  Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5.  Notice of Informal Patent Application (PTO-152)
6.  Interview Summary (PTO-413),  
Paper No./Mail Date 1.
7.  Examiner's Amendment/Comment
8.  Examiner's Statement of Reasons for Allowance
9.  Other \_\_\_\_\_.

### **EXAMINER'S AMENDMENT**

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mark Simpson on 09 March 2005.

The application has been amended as follows:

- 1.)
  - a.) In claim 1, lines 3, 5 and 7; delete the expression "single-phase".
  - b.) In claim 2, line 2; delete the expression "single-phase".
  - c.) In claim 3, lines 2, and 3; delete the expression "single-phase".
  - d.) In claim 4, line 2; delete the expression "single-phase".
  - e.) In claim 11, line 12; delete the expression "single-phase".
  - f.) In claim 12, line 6; delete the expression "single-phase".
  - g.) In claim 13, lines 4 and 6; delete the expression "single-phase".
  - h.) In claim 14, line 6; delete the expression "single-phase".
- 2.)
  - a.) Cancel claims 2 and 3.
  - b.) In claim 1, line 11, delete the period at the end of the sentence and replace with " ; wherein the calculating step further comprises modulating the received training signal by a

cosine function to generate a signal Rx and modulating the received training signal by a sine function to generate a signal Ry wherein,

$R(t)$  = the received training signal,

$\omega_0$  = the base frequency of the training signal, and

$$Rx = \int_R(t) * \cos(\omega_0 t) dt, \text{ wherein } T = 2\pi/\omega_0.$$

c.) In claim 4, line 1, delete the expression; "The method according to claim 2" and replace with "The method of claim 1".

d.) In claim 6, line 1, delete the expression; "The method according to claim 5" and replace with "The method of claim 3".

e.) In claim 8, line 1, delete the expression; "The method according to claim 7" and replace with "The method of claim 5".

3.) Cancel claim 12.

a.) In claim 11, delete the period at the end of the end of line 15, and add " ; wherein the phase offset,  $\Delta t$ , is determined based upon the arctangent (Rx/Ry), wherein

$$Rx = \int_R(t) * \cos(\omega_0 t) dt, \text{ and}$$

$$Ry = \int_R(t) * \sin(\omega_0 t) dt,$$

wherein  $T = 2\pi/\omega_0$

$R(t)$  = a training signal sent from the subscriber to the service provider, and  
 $\omega_0$  = the base frequency of the training signal.

4.) Cancel claim 14.

a.) In claim 11, delete the period at the end of the end of line 8, and add “ ; wherein the phase offset,  $\Delta t$ , is determined based upon the arctangent ( $Rx/Ry$ ), wherein

$$Rx = \int_R(t) * \cos(\omega_0 t) dt, \text{ and}$$

$$Ry = \int_R(t) * \sin(\omega_0 t) dt,$$

wherein  $T = 2\pi / \omega_0$

$R(t)$  = a training signal sent from the subscriber to the service provider, and

$\omega_0$  = the base frequency of the training signal.

b.) In claim 15, delete the expression, “The service provider according to claim 14” and replace with “The service provider according to claim 10”.

## REASONS FOR ALLOWANCE

2. The following is an examiner's statement of reasons for allowance: The instant application discloses a system that detects and corrects for phase offset between a subscriber and a service provider. The phase offset detection and correction system provides for improved performance of Pulse Code Modulation encoding in the upstream direction. A search of prior art records failed to disclose a system wherein;

“ $R(t)$  = the received training signal,

$\omega_0$  = the base frequency of the training signal, and

$$Rx = \int_T R(t) * \cos(\omega_0 t) dt ,$$

wherein  $T = 2\pi/\omega_0$ ”, as disclosed in claim 1. Nor does the prior art teach a system wherein

“ $Rx = \int_T R(t) * \cos(\omega_0 t) dt$ , and

$$Ry = \int_T R(t) * \sin(\omega_0 t) dt ,$$

wherein  $T = 2\pi/\omega_0$

$R(t)$  = a training signal sent from the subscriber to the service provider, and

$\omega_0$  = the base frequency of the training signal” as disclosed in claims 11 and 13.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled “Comments on Statement of Reasons for Allowance.”

  
AMANDA T. LE  
PRIMARY EXAMINER